

Evaluating a Cognitive–Behavioral Group Treatment Program for Veterans With Posttraumatic Stress Disorder

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The need to develop and further refine efficient and effective treatments for individuals with posttraumatic stress disorder (PTSD) in a climate of reduced mental health resources is critical. This study examined the impact of a series of cognitive–behavioral groups administered in an urban VA setting. The participants were veterans with chronic and severe PTSD, many of them struggling with additional physical and mental health problems. The data indicate modest improvements in the distress level of the veterans. Additional research is needed to further isolate the key elements of treatment that are most effective, palatable for patients, and cost-effective for the providers.

Posttraumatic stress disorder (PTSD) is a condition that is often chronic and quite debilitating. PTSD has been associated with decreased work productivity (Kessler & Frank, 1997), with poor physical health (Deykin et al., 2001; Zayfert, Dums, Ferguson, & Hegel, 2002), and with a high comorbidity with other psychiatric disorders (Breslau, 2001). As a result, patients with PTSD use more health care resources than individuals without PTSD (Deykin et al., 2001; Stein, McQuaid, Pedrelli, Lenox, & McCahill, 2000).

The lifetime prevalence of PTSD in the general population has been estimated to be 5–6% for men and 10–11% for women (Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Estimates of PTSD in medical settings are even higher, ranging from 12% in the gen-

eral medical population (Stein et al., 2000) to 20% among VA ambulatory care patients (Hankin, Spiro, Miller, & Kazis, 1999). These percentages correspond to a large number of people who are in need of intervention in a health care climate characterized by cutbacks and downsizing. Given the growing recognition of the severity of the distress caused by this disorder for the individual, the burden of this disorder on society, and the reduction in treatment resources (Breslau, 2001; Kessler, 2000), it is crucial that effective and efficient treatments be developed.

Current treatments for PTSD include psychotropic medications, individual psychotherapy, and group psychotherapy (see Foa, Keane, & Friedman, 2000, for a review). It is broadly recognized that medications are an efficient way to treat individuals with PTSD. They have been found to have a wide range of benefits, including reduction in the core symptoms of PTSD, such as reexperiencing, avoidance, and arousal, and in secondary symptoms, such as depression, sleep disturbance, physical health problems, decreased quality of life, and anger (Cyr & Farrar, 2000; Davidson, 2000; Pearlstein, 2000; Rapaport, Endicott, & Clary, 2002). However, with the range of social, interpersonal, occupational, and health problems frequently associated with chronic PTSD (Breslau, 2001; Kessler, 2000), psychosocial interventions often provide vital additional benefits not afforded from medication alone. The format of group treatment to target the range of problems stemming from PTSD has proven to be particularly popular given the increased demand for treatment for PTSD and the reduction in treatment resources.

Ostensibly, the benefits of group therapy for PTSD are numerous. This treatment modality allows for the provision of care for a large number of individuals

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while decreasing the demands on clinicians' time. It also provides the unique benefit of allowing group members to confront several of the secondary problems associated with PTSD, such as lack of trust in others, feelings of detachment, and diminished affect (Allen & Bloom, 1994).

Foy et al. (2000) conducted a review of group treatments with a variety of trauma populations (e.g., female adult and childhood sexual assault survivors, male combat veterans, multiple trauma survivors, etc.), using a wide range of outcomes (e.g., self-report PTSD symptom scales, structured clinical interviews for PTSD, depression inventories, and measures assessing locus of control, self-esteem, and social adjustment). They reported that positive treatment outcomes were found in 13 out of 14 published (although largely uncontrolled) studies. In their review, Foy and his colleagues emphasized the need for further research to determine whether specific group formats (e.g., supportive, cognitive behavioral, psychodynamic) yield differential improvement and how best to generalize research findings to clinical practice. Further, they noted that because most of the existing studies were conducted in research settings with strict control on participation and treatment implementation, research in clinical settings that emphasize treatment in PTSD (such as VA hospitals) and that have few exclusionary criteria for study participation is crucial for developing and assessing the effectiveness of these treatments.

Repasky, Uddo, Franklin, and Thompson (2001) conducted one such study of their time-limited, cognitive-behavioral treatment program for veterans with PTSD. Across a wide variety of measures, the veterans reported improvement on subjective measures with no corresponding change on self-reported symptom measures. The authors argued that one possible explanation for this discrepancy is that veterans do not perceive their symptoms to have changed but feel that they are better able to cope with their existing symptoms. Repasky and colleagues also reported that cohorts progressing through the program became highly cohesive and were an excellent source of social support and feedback to each other. The staff noted improved staff productivity and more efficient service delivery as well. Thus, Repasky et al. concluded that, overall, their comprehensive group treatment program was beneficial to both patients and clinical staff.

The main goal of the current study was to assess the effectiveness of a treatment program, which consists of a series of cognitive-behavioral groups. It was established to treat veterans with PTSD at the National Center for PTSD, Boston VA Medical Cen-

ter, and includes a broad array of assessment measures. This treatment program is composed of an initial assessment followed by a series of three 12-week structured groups: a psychoeducational group ("Understanding PTSD"), an anxiety management group ("Stress Management"), and an anger management group ("Anger Management").

On the basis of previous findings (Foy et al., 2000; Telch, Schmidt, Jaimez, Jacquin, & Harrington, 1995) and our own clinical experience, we predicted that veterans would report improvements in quality of life, and we expected to see improvements on measures assessing specific subsets of symptoms targeted by specific groups (i.e., reductions in aggressive behaviors after completion of the Anger Management group; see Peirce, Niles, Riggs, & Smith, 2000, for related findings).

In contrast, we expected that there would be little change in the core symptoms of PTSD as measured by self-report. We did not expect significant changes in core PTSD symptoms to emerge, given prior research that suggests that (a) veterans may be hesitant to report improvement in symptoms of PTSD given compensation concerns (Freuh, Mirabella, Chobot, & Fossey, 1994); (b) patients may make subjective ratings of improvement that may be clinically significant but that may not be reflected when self-report measures are statistically analyzed (Creamer, Morris, Biddle, & Elliott, 1999; Forbes, Creamer, & Biddle, 2001); and (c) exposure-based treatments have the most success in reducing the hallmark symptoms of PTSD (Foa, Keane, & Friedman, 2000), and our groups did not include this component.

Method

Participants

The participants in this investigation were male veterans who consented to be assessed while participating in one or more of three successive treatment groups at one or both of the following centers: the Behavioral Science Division of the National Center for Posttraumatic Stress Disorder (NCPTSD) and the Outpatient Clinic of the Boston Veterans Affairs Medical Center (OPC). Patients were consecutively enrolled in group treatment between 1996 and 2001. Not all veterans who participated in the group treatments completed the assessments for a variety of reasons (e.g., veteran missed group the day assessments were administered). Therefore, these analyses reflect the number of individuals who completed the pre- and postgroup assessments and not the number of people who were actually enrolled in the group treatment. There were 105 veterans who completed the

assessments for an Understanding PTSD group, 62 veterans who completed the assessments for a Stress Management group, and 30 veterans who completed the assessments for an Anger Management group.

Given that assessments were completed for program evaluation purposes rather than as part of a controlled study, we have little information on the clients who were referred to other modes of treatment, who chose not to participate in the groups, or who were not in attendance on the day the assessments were administered. However, Kutter, Wolf, and McKeever (2004) reported from a related sample that greater PTSD severity predicted initial enrollment and continued participation in the group treatment program. They also noted few differences in background and symptom measures between those who entered into the groups and those who did not.

Participants were predominately Vietnam era veterans (80% Vietnam War era, 8% World War II era, 5% Korean War era, 3% Gulf War era). Participants had served with the Army (60%), Marines (28%), Navy (6%), or Air Force (6%). The mean participant age was 52.04 ($SD = 8.70$, range = 31–74). The majority of participants were White, non-Hispanic (88%); 9% were Black, non-Hispanic, and 1% was White Hispanic. Married veterans composed 51% of the sample; 37% of the participants were divorced or separated. Most veterans had obtained at least a high school degree or equivalent (93%). Forty-nine percent of the participants were working at least part-time; 49% were retired, disabled, or unemployed. Many participants (56%) were receiving some form of VA disability ($M = 38\%$, $SD = 22\%$), and 19% of these men were receiving compensation for the PTSD they acquired as a result of their service.

Procedure

Participants were referred to the Behavioral Science Division for assessment and treatment recommendations. Veterans whose most pressing concerns were non-PTSD related (i.e., veterans with severe substance abuse or schizophrenia) were referred to other programs. Following a comprehensive assessment, veterans meeting *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association, 1994) criteria for PTSD and who were deemed appropriate for group therapy were referred to the following treatment sequence: Understanding PTSD, Stress Management, and Anger Management. These manualized groups were intended specifically for veterans with PTSD. Participants were asked to complete assessment measures at the first (Week 1) and last (Week 12) of each of the

group meetings, which allowed us to examine treatment gains following each group.

The Understanding PTSD group (Munroe, Bitman, Hymen, & Makary, 1995) addresses issues of trust, safety, self-care, effects of trauma, and treatment issues and options. The group's goal is to provide patients with a working knowledge of the ways in which PTSD may affect their lives. The Stress Management group (Grace & Niles, 1996) teaches veterans to alter their daily experiences through relaxation and cognitive restructuring. It works to reduce the impact of stress, hypervigilance, and the pervasive distrust of others. In this group, the veterans learn cognitive coping strategies, such as self-talk, identifying and altering stress-inducing thoughts, and adaptive problem solving. They are also taught relaxation and imagery techniques to facilitate lifestyle changes. The Anger Management group (Grace, Niles, & Quinn, 1996) focuses on helping veterans to better regulate their anger responses. The group focuses on increasing awareness of anger triggers and applying adaptive anger management strategies to anger-provoking situations (e.g., time-outs, relaxation, cognitive restructuring, ventilation, and positive distraction). In addition, the veterans work on strategies to help ensure that their feelings are communicated with the least amount of damage to themselves or others.

All groups use didactic materials, group discussions, and skills-based exercises as part of the treatment. Although the groups are manualized, clinical judgments about which components to emphasize in each session are accommodated. In addition to the group treatment, each veteran is assigned a clinical care coordinator. When appropriate, veterans are also referred to one or both of the following: adjunct individual treatment and a psychiatrist for pharmacological treatment.

Given that the data used in these analyses are archived data collected originally for clinical purposes, the VA Boston Internal Review Board waived the requirement of informed consent for this study. All data were stripped of identifying information to protect patient confidentiality.

Measures

PTSD Checklist—Military (PCL-M; Weathers, Litz, Herman, Huska, & Keane, 1993). The PCL-M is a brief, 17-item inventory designed to assess PTSD symptomatology in war veterans. Items correspond with PTSD criterion: 5 items measure re-experiencing symptoms, 7 items measure numbing and avoidance symptoms, and 5 items measure hy-

perarousal symptoms. Respondents rate the extent to which they have been bothered by symptoms over the past month on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). The PCL-M has been shown to have excellent concurrent validity ($r = .93$; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996) and test-retest reliability ($r = .96$; Weathers et al., 1993). Items on the PCL-M were summed to create a total score. Subscale scores were also computed for each symptom cluster (reexperiencing, avoidance, and arousal) by summing the items corresponding to each.

Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979). The BDI is a 21-item self-report checklist used to assess severity of depression in clinical and nonclinical populations. Alpha coefficients for the BDI of .86 and .81 have been reported in meta-analyses in psychiatric and nonpsychiatric samples, respectively (Beck, Steer, & Garbin, 1988). A mean concurrent validity of .72 has been reported in analyses comparing the BDI to a variety of other depression measures (Beck et al., 1988). Items on the BDI were summed for the purposes of the current study.

Boston Life Satisfaction Inventory (BLSI; Smith, Niles, King, & King, 2001). The BLSI is a 26-item self-report instrument designed to measure individuals' satisfaction with life in a variety of areas, including living situations, relationships with friends and family, work, safety, and well-being. Respondents rate each item on a 7-point scale ranging from *very dissatisfied* to *very satisfied*. The BLSI has demonstrated acceptable psychometric properties with an alpha coefficient of .91, test-retest reliability over 4 months of .67, and a correlation of .67 with the Frish Quality of Life Measure (Smith et al., 2001). Items on the BLSI were summed; higher scores indicate increased life satisfaction.

Violence Screen (V-Screen). The V-Screen is an unpublished instrument developed at the Behavioral Science Division of the National Center for PTSD to assess aggressive behaviors over the past 4 months. Items ask about both relatively minor acts of aggression ("I broke off contact with someone out of anger or fear of losing control") and severe acts of aggression ("I used a weapon against someone"). Item responses range from 0 (*never*) to 6 (*more than 20 times*). Items on the V-Screen were summed; higher scores indicate an increased number of violent behaviors.

General Health Scale from the Veterans SF-12 (SF-12V; Kazis et al., 1994). The SF-12V is derived from the commonly used Medical Outcomes Study SF-12 (Ware, Kosinski, & Keller, 1994) and

has been normed for an ambulatory veteran population. The SF-12V was validated against the Medical Outcomes Study SF-36 with correlations in the .93-.97 range (Ware et al., 1994). The SF-12V General Health Scale is a single item which asks veterans to rate their general health on a 5-point scale ranging from *excellent* to *poor*. Lower scores indicate better self-reported health.

Results

Pre- and postgroup means and standard deviations for each of the outcome variables are presented in Table 1. A series of correlated groups t tests were used to compare the pre- with the postgroup scores on each of the outcome measures for each group in the treatment series (i.e., Understanding PTSD, Stress Management, Anger Management). There was one significant change following the Understanding PTSD group: reports of reexperiencing symptoms as assessed by the PCL-M decreased following the completion of the group, $t(80) = 2.20, p < .05$. The strength of the relationship was .06, as indexed by η^2 , indicating a weak effect (Rosenthal, 1995).

There were several statistically significant improvements following the Stress Management group. Participants endorsed lower levels of depression on the BDI after attending Stress Management group therapy, $t(52) = 3.41, p < .001$. The strength of the relationship was .18, as indexed by η^2 , indicating a moderate effect. The clients also rated their overall life satisfaction to be better than it had been prior to the group, $t(46) = -2.14, p < .05$. The strength of the relationship was .09, as indexed by η^2 , indicating a moderate effect.

There also were statistically significant changes following the Anger Management group. Specifically, participants reported that they were less violent at the conclusion of the Anger Management group than they had been prior to the group, $t(21) = 4.11, p < .001$. The strength of the relationship was .45, as indexed by η^2 , revealing a strong effect. These same clients also rated their general health to be better than it had been before the group started, $t(21) = 2.32, p < .05$. The strength of the relationship was .20, as indexed by η^2 , indicating a strong effect.

Discussion

In this study, we examined whether a series of cognitive-behavioral groups to address symptoms of PTSD and to improve coping skills for managing these symptoms were effective at reducing reports of psychological distress. Although the effects of the Understanding PTSD group were small, the group

Table 1
Means and Standard Deviations for Each Measure
Given at Pre- and Postassessment

Measure	Assessment			
	Pre		Post	
	M	SD	M	SD
Understanding PTSD ^a				
Beck Depression Inventory	27.55	9.69	26.31	9.57
Life Satisfaction Inventory	2.66	1.50	2.72	1.36
General Health Scale	3.95	1.07	3.84	0.72
PTSD Checklist Total	64.18	12.31	62.64	12.73
PCL-Reexperiencing*	18.32	4.64	17.53	4.20
PCL-Avoidance	26.58	5.21	26.07	6.01
PCL-Hyperarousal	19.61	3.60	19.19	3.70
Violence Screen	16.13	10.11	17.63	8.94
Stress management ^b				
Beck Depression Inventory**	28.77	9.09	25.49	9.61
Life Satisfaction Inventory*	2.36	1.21	2.70	1.50
General Health Scale	3.85	0.82	3.74	0.76
PTSD Checklist Total	64.86	10.37	63.30	11.45
PCL-Reexperiencing	18.52	4.00	18.45	3.65
PCL-Avoidance	26.76	4.82	25.83	5.45
PCL-Hyperarousal	19.72	3.71	19.21	3.75
Violence Screen	10.60	5.07	9.82	6.09
Anger management ^c				
Beck Depression Inventory	29.31	9.11	26.69	9.66
Life Satisfaction Inventory	2.54	1.10	2.58	1.02
General Health Scale*	4.23	0.75	3.95	0.72
PTSD Checklist Total	66.44	8.50	64.44	8.92
PCL-Reexperiencing	19.12	3.00	19.04	3.38
PCL-Avoidance	26.88	4.03	25.80	3.82
PCL-Hyperarousal	20.44	2.87	19.60	3.00
Violence Screen**	15.23	7.02	10.55	8.12

Note. The Violence Screen was added to assessment packets during later group iterations, resulting in a lower *n* for this measure. PTSD = posttraumatic stress disorder; PCL = PTSD checklist.

^aOne hundred and five participants completed assessments prior to and upon completion of the Understanding PTSD group.

^bSixty-two veterans had completed assessments for the Stress Management group.

^cThirty individuals completed pre- and postassessments for the Anger Management group.

p* < .05. *p* < .001.

treatment reduced the reported distress associated with reexperiencing symptoms. The Stress Management group, which focused on relaxation and cognitive-restructuring skills, had a moderate impact on the reports of depression and overall life satisfaction. Furthermore, the Anger Management group, which

focused on increasing awareness of anger triggers and the application of adaptive anger management skills, produced strong declines in reports of recent violent behavior and improvements in self-reports of overall physical health.

These results were consistent with our predictions that changes would be most evident on measures assessing specific behavioral change and on life satisfaction and less likely to be demonstrated on the self-reported distress associated with the core features of PTSD. Our results are consistent with results reported in other studies. For example, Telch et al. (1995) reported improvements in ratings of quality of life following cognitive-behavioral treatment in anxious patients, and Forbes, Creamer, and Biddle (2001) noted that the PCL is relatively insensitive to detecting changes following treatment in comparison to the "gold standard" of the Clinician Administered PTSD Scale (CAPS; Blake et al., 1990).

Although the extent of our findings is limited, this is not surprising given the nature of our data and the challenges of conducting treatment outcomes studies, especially with veterans. As mentioned earlier, it has been suggested that patients may anecdotally report improvements that may be clinically significant but that may not be detected when these self-report measures are statistically analyzed (Creamer et al., 1999; Forbes et al., 2001). It also has been suggested that the absence or restriction in reports of change in mental health by veterans may be due to symptom over-reporting on self-report measures in this population (Fairbank, Keane, & Malloy, 1983) or a hesitation to report improvement in symptoms because of compensation concerns. Alternatively, the amount of change may have been limited by the fact that the groups are not trauma focused (Rogers, 1998), or it may instead be a genuine reflection of the severe and chronic nature of the problem (Freuh et al., 1994).

There are also methodological limitations to this study. For example, we did not include control or comparison groups in our study. Thus, it is possible that factors other than the active treatment variables may have contributed to our findings. For instance, it may be that the veterans improved over the course of a group because of the additional social support provided by being in a group. In addition, our data are based exclusively on self-reported assessments of psychological distress, and, thus, our ability to draw conclusions is limited by the validity and reliability of this methodology. In general, self-report data are subject to threats to validity such as social desirability and response-style biases. Thus, as suggested above, it may be that the veterans in the treatment groups were hesitant to acknowledge much change in

the status of their distress as they may fear that to do so would impact their service connection or their identity associated with being a traumatized veteran. Further, the generalizability of our results to women and nonveterans is limited by the fact that all of our study participants were male veterans.

Despite these limitations, our study is based on the use of a manualized, and therefore standardized, treatment. We used psychometrically sound assessment measures of PTSD and a commonly comorbid disorder—depression. All of our participants reported significantly high levels of distress at the onset of the groups and, although not formally assessed, a large proportion of our participants have additional mental and physical problems. Finally, we were able to demonstrate some improvement in a group of individuals who suffer from severe and longstanding symptoms of PTSD.

In sum, we found that the groups produced modest improvements in the distress level of the veterans, which is consistent with our clinical experience and with results from prior research studies. Although the documented gains were modest, both veterans and clinicians have been highly satisfied with the outcomes. The veterans in the groups reported that they liked the groups, as evidenced by the fact that 98% of our patients reported being highly satisfied with the treatment. In addition, the clinicians have reported that the groups appear effective and efficient and that they have helped to reduce the growing burden associated with decreased resources and increased patient demand for treatment.

In the future, given the difficulty in assessing treatment outcomes in this population, it is suggested that studies use multiple methods of assessment based on self-report measures and clinician-administered interviews. In addition, it is recommended that future studies include a control or comparison group (e.g., supportive or trauma focused) and a broad selection of measures, including assessments of the core symptoms of PTSD, associated symptoms (i.e., violent behavior, satisfaction with current relationships), consumer satisfaction with treatment, personally defined treatment goals, and clearly defined target symptoms (e.g., number of times veteran leaves house to engage in social activity). For example, many veterans are wedded to their hypervigilance as they strongly believe that their survival depends on this behavior and, consequently, are considerably less motivated to alter this behavior, even when the negative consequences are highlighted. Thus, measures of hypervigilance are less likely to be influenced by treatment. Furthermore, veterans who are connected to VA services for PTSD may be somewhat reluctant to report improve-

ments in symptoms of PTSD but may be willing to report improvements in health status, quality of life, and so forth. By using a broad range of measures, researchers are likely to capture the genuine changes described by the veterans that might not otherwise be captured by a mono-method approach focused only on assessing the core symptoms of PTSD.

Although our findings are modest, the clinical implications are broad. Specifically, our data indicate that interventions that target specific problematic behaviors are most effective. In addition, psychoeducation appears to have a function in reducing the distress associated with reexperiencing symptoms, possibly by normalizing these experiences as common responses to traumatic events. Further, our data indicate that standard behavioral arousal reduction and cognitive-restructuring techniques can be taught in a group format and are helpful in decreasing veterans' experiences of stress and anxiety. It is our speculation that treatment effects are likely to be greater if veterans' functional goals were incorporated into the course of treatment and if potential movement on these goals were tied to the skills taught in the group.

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